



Monitoring Glycans - The Future Of Diagnostics

Smart Sugars Lesson #102

by JC Spencer

Researchers in universities and research labs around the world are working on advanced technologies to better understand glycans. Glycans are sugar molecules that coat the surface of every living cell.

Scientists, until recently, thought glycans were relatively unimportant. Today, there is no question but that Glycoscience holds the keys to life and health. Glycans play critical roles in cell regulation, human health, and disease progression.

In 2008, I began following and writing about the development of technologies to investigate these glycoprotein receptor sites that coat cells like fuzz on a peach.

The University of Georgia has played an important role in glycomics dating back to the eighties. The University's Michael Pierce, principal investigator at their Complex Carbohydrate Research Center, said, "*The tide is starting to turn, and researchers are beginning to appreciate how important these sugar molecules are, so our glycomics center exists to develop the technologies and tools to investigate these critical structures.*"

The Center recently received a \$10.4 million grant from NIH for the purpose of developing new technologies for analysis of glycans. Pierce said, "*We are creating technologies and tools that are the foundation for the next generation of diagnostics and treatments.*"

Scientists have recently discovered that glycans are involved in the development of many diseases, and they continue to discover more health biomarkers. The University News Service stated, "*The study of glycomics is in its*

early stages and, therefore, it is dependent on the development of new specialized tools, custom-made technologies and advanced testing equipment to help research progress."

The ability to identify and understand complex glycan structures has advanced dramatically in the past few years. We have discovered that the lack of specific glycans is the cause for many diseases but we have only seen the tip of the iceberg. Glycoscience is the new frontier medicine that can save billions of dollars in healthcare.

The Endowment for Medical Research is reaching out to universities, research groups, and corporations in a number of countries in an effort to follow the most advanced technology in glycoscience.

The ability to quantify glycans, qualify the glycans, and establish which sugars are lacking will be the Holy Grail of medicine and diagnostics. The ability to glycosylate the cells with the proper sugars will be the Holy Grail of medicine and all of healthcare.

Source:

<http://onlineathens.com/uga/2013-09-06/uga-center-receives-104-million-grant-renewal-glycobiology-research>

www.GlycoscienceNEWS.com

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<http://www.endowmentmed.org/content/view/full/826/106/>

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<http://www.endowmentmed.org/pdf/SmartLesson102>

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